LOL-HECO-IR-44

Ref: "A survey was developed and distributed to several IBEW line contractors" (Exhibit 7, EDM Report, page 38).

Question(s):

a. Please provide a copy of the survey.

b. How were the line contractors chosen?

c. How was it determined which group (one, two, or three) that they belonged in?

d. "the third group is the most reliable source" (Exhibit 7, EDM Report, page 39). What is the basis for that statement?

e. What were the survey results for that group favoring LW?

HECO Response:

a. A copy of the survey is attached as pages 3-6.

b. The survey was performed by EDM with mainland contractors, who were chosen based on their past working relationships with EDM staff.

c. The Mainland contractors were placed in the appropriate group based on conversations between EDM staff and the officers of the respective corporations.

d. The safety record and number of hours spent yearly on LW are the basis for the grouping. A contractor that only performs work under de-energized conditions (zero hours of LW) would fall into group one. A contractor that regularly performs LW but has a poor safety record, including accidental switching operations during LW would fall into group two. The third group consists of contractors that regularly perform de-energized work and LW, and have a good safety record.

e. All responses to the survey were provided verbally. All responses indicated that each job is unique and many factors such as weather, line configuration, crew experience and access,

impact the decision making process and that a written survey seeking to identify the types of work to be performed under LW conditions is difficult to respond to without qualifying every answer.

SURVEY – LIVE LINE MAINTENANCE

I have been asked to provide some rough statistical information pertaining to the costs/benefits of Live Working Methods (LW) vs. Cold Working Methods (CW) on 138kV lines and am asking you to take a few minutes out of your day to provide me with some valuable information to help me complete the report.

I have made every attempt to keep my questionnaire short and to the point but if I have failed to state the question clearly, please contact me at 480-917-1434 to discuss.

I would appreciate it very much if you would take a few minutes in responding back to me by Friday April 11, 2003.

All of the following questions should be answered on the premise that the work will be performed on 138kV lines only.

SURVEY

1. What type of maintenance work would you consider as normally acceptable practices for LW work on 138kV. Please check all that apply.

   - ❑ String insulator change out on a tangent structure
   - ❑ String insulator change out on a dead-end
   - ❑ Tangent-arm change outs
   - ❑ Dead-end arm change out
   - ❑ Vibration dampers
   - ❑ Marker balls
   - ❑ Down guys
   - ❑ Structure replacements
   - ❑ Other _____
   - ❑ Other _____

2. Do some structure types make it more difficult to perform LW work at 138kV? Such as single wood, H-frame, steel tubular, steel lattice, aluminum lattice.

   - ❑ Yes
   - ❑ No

   If yes, which types make it more difficult to perform LW work on?

   _____
   _____
   _____
   _____

3. Does conductor configuration make it more difficult to perform LW work at 138kV? Such as compact spacing, double circuit, vertical configuration or wishbone.

   - ❑ Yes
   - ❑ No

   Which configuration causes you the contractor the most concern in performing LW work?

   _____
   _____
   _____
   _____

4. The attached spreadsheet was developed with the hope of identifying estimated man-hours to complete specific work functions on specific towers insulated for 138kV. I am looking for estimates based on experience and educated assumptions. I have included the 6 structure types as references in developing your man-hour estimates.

SURVEY COMPARING MANHOURS TO COMPLETE SPECIFIC WORK FUNCTIONS ON A LIVE LINE AND DEAD LINE ON SPECIFIC STRUCTURE TYPES

The purpose of this table is to try and identify which work functions would be better performed on a dead line. If the work function can be performed on a hot line then so indicate by indicating the number of man-hours necessary to complete the work in the appropriate box. If, ***in your opinion*** the work function would be better performed on a dead line then indicate by placing the number of man-hours necessary to complete the work in the appropriate box. **If your reason to perform the work on a dead line is based on safety concerns then place an "S" in the LW column. If your decision is based on efficiency then place an "E" in the LW column.**

Assume:

1 Structures are climable

2 No vehicle access

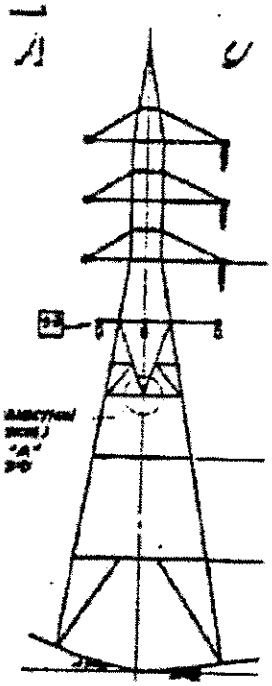
3 Helicopters could be used for vibration dampers and marker balls.

4 Helicopters could be used for dropping men, materials and equipment off at or near the site.

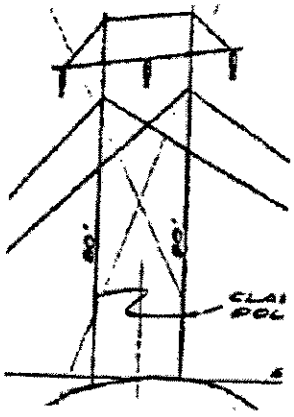
5 Identify man-hours only

6 Please use your experience in putting these numbers together. It is not my intent to have you spend more than an hour on the entire survey.

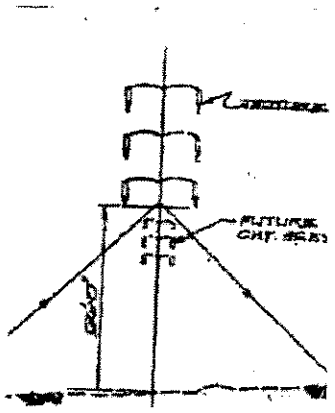
		TOWER TYPE											
Item #	Work Function	Steel Lattice 90 deg Dbl DE		Wood H-Frame Tangent		Single Steel Pole Dbl Ckt Tangent w/UB		3-Pole Wood Lite Angle		2-Pole Wood Tangent w/Tie Down		3-Pole Steel Medium Angle	
		LW (mhrs)	CW (mhrs)	LW (mhrs)	CW (mhrs)	LW (mhrs)	CW (mhrs)	LW (mhrs)	CW (mhrs)	LW (mhrs)	CW (mhrs)	LW (mhrs)	CW (mhrs)
1	Insulator change out												
2	Arm Change-out	N/A											
3	Vibration Dampers												
4	Marker Balls												
5	Down Guys	N/A	N/A			N/A	N/A						
6	Structure Replacements	N/A											
7													
8													
9													
10													



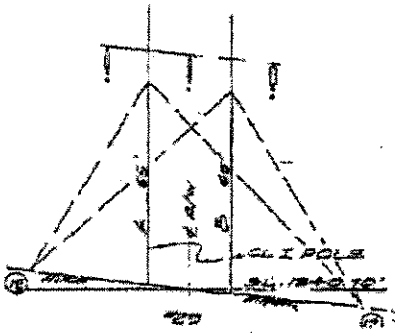
Steel Lattice
90° Dbl DE



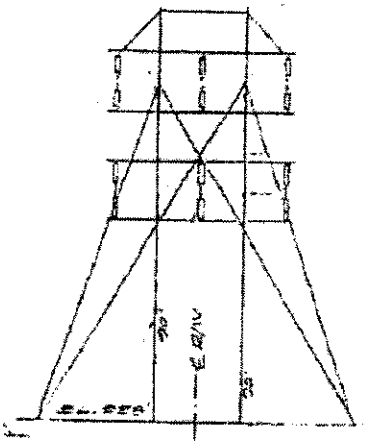
Wood H-Frame
Tangent



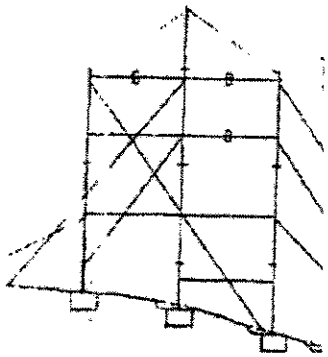
Single Steel Pole
Dbl Ckt. w/ UB



3-Pole Wood
Lite Angle



2 Pole Wood Tangent
w/ Hold Downs



3-Pole Steel
Medium Angle